



# Operations and maintenance CFC phase-out

HSB, a Munich Re company, is a technology-driven company built on a foundation of specialty insurance, engineering, and technology, all working together to drive innovation in a modern world.

## CFC phase-out

The multinational agreement, known as the Montreal Protocol to reduce the production of ozone-depleting substances, was held in Montreal in 1987. There have been annual meetings of the parties and the subsequent revisions are currently in the latest edition, "Handbook for the Montreal Protocol on Substances that Deplete the Ozone Layer" Tenth Edition (2016).

Chlorofluorocarbons (CFCs) have not been manufactured since 1996. The EPA has established a national recycling program for these substances. There is currently no end-of-use date for these substances in the U.S. federal regulations.

To identify systems with CFCs, locate the nameplate or label on the equipment. Look for the entry in the "refrigerant" block.

## Why HSB is concerned

Manufacturing of air conditioning and refrigeration equipment that use CFCs has been prohibited since 1994, and servicing has become problematic due to the lack of available parts and the high cost of recycled CFCs. This equipment is, in most cases, at the end of its useful life. Operations that rely on CFC equipment are at an increased risk for lengthy repair periods and potentially significant business interruptions.

Large office buildings with centrifugal air conditioning systems which utilize CFC-11 refrigerants still remain in service. In addition, CFC-12 (and related mixtures) of refrigerants are also in use for retail foods, restaurants, hotels, and food processing. These locations continue to use CFCs in display case freezers, coolers, and walk-in storage areas.

Air conditioning and refrigeration systems often leak as much as 15% of the refrigerant charge each year. Current prices of \$23 per pound for recycled CFCs is nearly 10 times the cost of newer refrigerants; which results in increased maintenance costs.

### **Actions the insured should take**

Conversion of these older systems to operate with newer refrigerants can be accomplished at lower costs but capacity and efficiency usually suffer. Often equipment of this age is not worth the investment for refrigerant conversion.

All equipment currently using CFCs should be scheduled and budgeted for replacement. This will increase the efficiency of the equipment and reduce the energy costs. Energy savings and reduction of maintenance costs will, in most cases, offset the capital expenditures required for its replacement.

Investigate the replacement of the A/C equipment for offices/condominiums. A new high efficiency 400 ton chiller and cooling tower, a common size for offices/condominiums, should cost approximately \$200,000 to purchase and install. With annual operations of 3,000 hours, this could produce an energy savings of over \$70,000 per year (over 40%). This model installation would have a simple pay back of less than three years.

Replacement of refrigeration equipment with the U.S. Department of Environmental Protection's ENERGY STAR recommended products can reduce these energy costs. The EPA reports that commercial refrigerators and freezers that have earned ENERGY STAR ratings are on average 40% more efficient than standard models. Display cases that meet these standards are over 20% more efficient than conventional equipment. These models have a high efficiency evaporator, condenser motors and high efficiency compressors.

Additional information regarding ENERGY STAR savings, rebates, and a commercial food service distributor partner list can be located at the following link: [https://www.energystar.gov/products/commercial\\_food\\_service\\_equipment/commercial\\_refrigerators\\_freezers](https://www.energystar.gov/products/commercial_food_service_equipment/commercial_refrigerators_freezers).

If the equipment uses R-11, R-12, R-13, R-13B1, R114, R-500, R-502, or R503, you should contact a certified reclamation contractor for removal. The EPA publishes information concerning certified reclamation contractors online at: <https://www.epa.gov/section608/epa-certified-refrigerant-reclaimers>.

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